Denys B.
Senior C++ Engineer with video experience

SUMMARY

- Senior Software Engineer with over 11 years of experience in full-cycle product development with video experience. - Proficient in multiple programming languages including C++17, C#, Golang, Python, and SQL. - Skilled in test-driven and behavior-driven development, with a focus on desktop and client-server application development for Windows, Linux, and Mac OS. - Experienced in cloud application development using microservice architecture, Docker, AWS, Kubernetes, and SQL/NoSQL databases. - Strong knowledge of Windows internals and driver development, including WinAPI, IPC, RPC, ATL/COM, KMDF drivers, and system services. - Expertise in reverse engineering for Windows and Mac OS, using tools such as IDA Pro, WinDbg, and HEX editors. - Proficient in data protection using system built-in and third-party crypto libraries like OpenSSL.

TECHNICAL SKILLS

Main Technical Skills	C++
Programming Languages	C, C#, C++, Go, Java, OpenCL, Python
C++ Libraries and Tools	ATL, tinyxml
C++ Frameworks	Boost C++
.NET Platform	.NET, Visual Basic .NET
Databases & Management Systems / ORM	PostgreSQL, Redis, SQL
Deployment, CI/CD & Administration	Active Directory
SDK / API and Integrations	Admission Webhooks, GraphQL, Swagger, TPM API, Windows API
Scripting and Command Line Interfaces	Bash, PowerShell
Web/App Servers, Middleware	COM
Platforms	CUDA
Mail / Network Protocols / Data transfer	cURL, GRPC, OpenSSL
Virtualization, Containers and Orchestration	Docker, Kubernetes
	gtest

QA, Test Automation, Security	
Logging and Monitoring	Prometheus
File Systems, Storage	Protobuf
Third Party Tools / IDEs / SDK / Services	Qt Framework
Methodologies, Paradigms and Patterns	RPC (Remote Procedure Call)
Other Technical Skills	ArangoQL, bird, C for KMDF, Credential Provider, Custom Resource Definition, DocumentDB (MongoDB), go-kit, go-nats, Hashicorp Consul, Hashicorp Consul & Vault, jsoncpp, KMDF, mhook, SystemD, WinRM

WORK EXPERIENCE

Senior Software Engineer, Clipboard protection hooks

Duration: 2023
Summary:

- Researching behavior of WinAPI that interacts with clipboard
- Implementing COM-server with clipboard protection functionality
- Implementing hooks DLL with clipboard protection functionality and monitoring features
- Investigating and solving problems with clipboard interaction for some specific application with non-standard clipboard

Responsibilities: Researcher, Developer
Technologies: C++17, mhook, WinAPI, ATL, COM

Senior Software Engineer, Driver filter for Windows Registry redirection

Duration: 2022
Summary:

- Researching how to redirect registry keys for particular process to isolate it
- Implemented PoC that redirects registry calls for children of the target process

Responsibilities: Researcher, Developer
Technologies: C for KMDF, Windows Kernel API

Senior Software Engineer, Antikeylogger solution in KMDF driver

Duration: 2021
Summary:

- Researching how to intercept keystrokes in kernel and deliver them to the target process in user mode
- Implemented PoC with interceptor driver and consumer DLL that should be injected to the protected process

Responsibilities: Researcher, Developer
Technologies: C for KMDF, Windows Kernel API

Senior Software Engineer, Software defined network

Duration: 2020-2021
Summary:

- Creating network namespaces, interfaces, wireguard tunnels as systemd units
- Implemented parts of heavily loaded multithreaded system
- Making benchmarks
- Monitoring the network namespace resources and exporting to Prometheus

Responsibilities: Backend developer
Technologies: Go, bash, Docker, Prometheus, Systemd, bird

Senior Software Engineer, Property management system

Duration: 2020
Summary:

- Creating architectures for microservices decomposed by managed data
- Implementing microservices with GRPC internal API using code generation tools
- Designing and implementing GraphQL interface for API-gateway using code generation tools
- Integrating US payment system
- Integrating tenant screening service

Responsibilities: Lead backend developer, Researcher
Technologies: Go, ArangoQL, bash, Docker, Kubernetes, GraphQL, GRPC (proto3)

Senior Software Engineer, Software defined perimeter

Duration: 2019-2020
Summary:

- Separating the project on specific modules, creating architectures for each module and their interaction inside and outside the infrastructure
- Implementing SDP controller with Keycloak as default IDP
- Implementing user authorization and authentication with JWT on SDP controller
- Managing user access to internal and external resources using DAC logic
- Designing and implementing REST API using Swagger and golang code generation tools
- Integrating OKTA as external IDP

Responsibilities: Researcher, Backend developer
Technologies: Go, bash, Swagger, Redis, Hashicorp Consul

Senior Software Engineer, Corporate identity provider based on microservices

Duration: 2019
Summary:

- Implementing interaction between services using REST API and NATS queue
- Implementing data analyzing aimed to protect privacy of logged in user
- Implementing fast and secure data sharing between services
- Migrating PostgeSQL tables to the new schemas

Responsibilities: Researcher, Dev manager, Backend developer
Technologies: Go, SQL, bash, Docker, Kubernetes, go-kit, go-nats, Redis, PostgreSQL, DocumentDB (MongoDB), Hashicorp Consul & Vault

Senior Software Engineer, Kubernetes native policy engine

Duration: 2019
Summary:

- Researching the work of Kubernetes API server
- Implementing interaction with Kubernetes API server using k8s repo packages
- Implementing CRD with own controller
- Implementing validation and mutation admission webhooks in CRD controller
- Made cloud application stand-alone and self-tuning for work inside and outside the cluster

Responsibilities: Researcher, Dev manager, Developer
Technologies: Go, bash, Kubernetes, Custom Resource Definition, Admission Webhooks

Senior Software Engineer, Highly available service by client's geolocation

Duration: 2018
Summary:

- Researching the concept for AWS
- Writing scripts and resource definitions for creating infrastructure in the cloud
- Calculating development and operation costs for AWS, Azure and Google Cloud

Responsibilities: Researcher, Developer
Technologies: Python, bash

Senior Software Engineer, Autotest for RDP Server component

Duration: 2018
Summary:

- Implemented scripts that prepare and manage Windows and Linux machines on Hyper-V
- Implemented scripts for starting RDP connection from the Windows as server
- Implemented Autoresponder for the RDP client side to determine successful RDP connection
- Implemented tests management using
- csv file
- Implemented automated test deployment and launching using Bamboo

Responsibilities: Researcher, Single developer
Technologies: PowerShell, C#, bash, WinRM

Senior Software Engineer, RDP Server component for custom authentication

Duration: 2018
Summary:

- Researching TPM, reversing Windows binaries for its support
- RDP virtual channel implementation
- Implementation of Credential Provider with custom Credentials
- Researching OS bugs and limitations
- Improving functionality and fixing bugs in PnP driver

- Implementing COM-server as Windows service
- Implementing interaction with Active Directory and Local System Authority from C# and C++ code

Responsibilities: Researcher, Developer
Technologies: C++, C#, PowerShell, bash, Credential Provider, COM, TPM API, Active Directory

Senior Software Engineer, Provisioning of VMs on VMWare vSphere and Hyper-V

Duration: 2017-2018
Summary:

- Fixing bugs in windows services
- Implementing support of new version of VMWare vSphere in provisioning module
- Fixing bugs in PnP driver for USB-devices

Responsibilities: Developer
Technologies: C++, C, VB6, Java, COM, KMDF

Senior Software Engineer, Restoring damaged SQLite databases

Duration: 2017
Summary:

- Researching SQLite database structure
- Fixing and improving legacy code
- Implemented parsing of all kinds of SQLite pages
- Benchmarking and improving performance

Responsibilities: Dev manager, Developer, Researcher
Technologies: C++

Senior Software Engineer, Cloud-based storage and analytic tool for personal sensitive data

Duration: 2016-2017
Summary:

- Implemented Server's REST API for storing, processing and retrieving user data
- Implemented desktop client application with Qt for Windows and Mac OS
- Fixing urgent bugs on server's side

Responsibilities: Developer
Technologies: C++, C#, Python, .Net, boost, gtest, RPC, SQL

Senior Software Engineer, Forensic tool targeting mobile devices for Windows and Mac OS

Duration: 2013-2016
Summary:

- Decomposing, refactoring, testing and documenting legacy code
- Implementing new features in obtaining and analyzing useful data
- Analyzing and improving performance
- Researching new abilities for the product using reverse engineering

- Separating functional parts of the product as separate sub-products in form of static and dynamic libraries with CLI

Responsibilities: Developer, Researcher, Acting Dev manager
Technologies: C++, C#, Python, Qt, boost, gtest, openssl, curl, CUDA, OpenCL, protobuf, tinyxml, jsoncpp